Performance Measurement
Baker Avenue/Gallagher Street Transit Priority Improvements

In order to monitor the performance of the Baker Avenue/Gallagher Street Transit Priority Improvements, the City of Orden will conduct the following annual measurements:

1. TRANSIT RIDERSHIP COUNTS - The City of Orden will work with Grey Transit to produce annual transit ridership counts for transit routes that use Baker Avenue and Gallagher Street. We will review the counts that were projected for this project and identify if the project met projections. If the ridership counts are below the projected counts, the City will work with Grey Transit to increase transit ridership through additional promotional activities.
2. BUS STOP COUNTS - The City of Orden will work with Grey Transit to produce annual bus stop counts that are located on Baker Avenue and Gallagher Street. We will review the counts that were projected for this project and identify if there are any deficiencies. If the bus stop counts are below the projected counts, the City will work with Grey Transit to increase transit ridership through additional promotional activities.
3. FEEDBACK FROM COMMUNITY GROUPS - The City will work with neighborhood and business organizations to collect feedback on the transit improvements from commuters and residents. We will collect qualitative information from the community and use this information to supplement the transit ridership and bus stop counts. Information that will be collected includes but is not limited to:

- Do you like the improved transit waiting areas?
- Do you ride transit more because of the improved speed and reliability?
- Do you feel safer and more secure waiting for the bus?

Based on the ridership and bus stop counts will be collected, the City will calculate the number of vehicle trips removed for weekday, Saturday and Sunday. The City will also calculate the annual vehicle miles reduced using an average trip length of 2.75 miles inbound and 3.08 miles outbound based on 2009 ridership data (see attachment for more information).

Beginning in fall 2011, SDOT will calculate a baseline measure for new vehicle trip and VMT reductions. To determine if the improvements were successful in reducing vehicle trips and VMT, SDOT will calculate new vehicle trip and VMT reductions annually. To factor in expected changes in ridership, SDOT plans to take an average of comparable high ridership Metro routes located in SE Orden. These routes include Metro routes 3, 4, 7, 8, 9, 14, 23, 27, 36, 48, 60, and 106. We will compare the SE Orden area wide average to the growth in ridership for Metro Route 7.

Proposed Schedule for Measuring Performance

Project Date	Measurement Activity
December 2010	Phase I and II of the Baker Avenue transit improvements are complete; conduct baseline measurement using February 2010 ridership data.
December 2011	Conduct Year 1 measurement
December 2012	Conduct Year 2 measurement
December 2013	Phase III of the project will be complete in June 2013; conduct year 3 measurement.
December 2014	Conduct Year 4 measurement

Average Trip Length for Route 7 Riders

This calculation determines that the average route 7 bus trip is roughly 2.75 miles inbound and 3.08 miles outbound, excluding trips in the Ride Free Area. These values should be taken as very approximate since the stop level ridership is approximate and averaged over all the Route 7 trips over several service changes, including different route patterns. Additionally, the methodology, described below, is predictive and not based on actual origin-destination data, which does not exist.

To not include the effects of the Ride Free Area, the outbound offs inside the RFA were reduced to zero and outbound ons at the same stop reduced by the same amount. The inbound ons were reduced to zero, and the inbound offs at the same stop reduced by the same amount.

The ridership data was from 2009, so there were some inconsistencies that were corrected. The stops at Bremmings are new, so the ridership at the two zones near it, which were closed, were reassigned to Bremmings. Also, the northbound stop at S Winston St was relocated to 39th Ave S, so the ridership was reassigned accordingly. The stops that were closed as part of the Route 7 bus stop spacing project were not available in the route sequence data, so that ridership was not included. The stop closures were relatively spread evenly through the corridor at relatively low ridership stops, so the net effect on the outcome is assumed to be negligible.

Methodology

The methodology used to estimate the average trip length on a Rout 7 trip predicts the most likely destination for each boarding based on the number of offs at each following stop, then takes a weighted average for those trips.

Probability of Making the O-D Pair (tab 1)

The probability of a trip beginning at each origin and ending at each following destination is predicted by dividing the offs at each following destination by the total number of offs for all the following destinations.

Number of Riders Making the O-D Pair (tab 2)

The probability is then multiplied by the number of boardings at each stop for each possible destination. This predicts the actual number of riders, per day, making that trip.

Distances (tab 3)

The distance between each neighboring stop is calculated using the Pythagorean Theorem and it's X and Y coordinates. The distance for each O-D pair is the sum of all these segments between any two stops. This is an estimate, which does not take into account curves and turns.

Trips x Distance (tab 4)

This tab multiplies the number of riders times the distance for each O-D pair in tabs 2 and 3.

Average Trip Length (tab 1)

The average trip length is calculated by summing the Trips x Distance values for each O-D pair, and dividing the result by the total number of boardings. The result is a weighted average.